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RECORD OF ORAL HEARING

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

————————

Ex parte YOUNGLOK KIM and ARIELA ZEIRA

————————

Appeals 2009-006365, 2009-006389, 2009-006410,
2009-006660, 2009-006704, 2009-006837, 2009-007629
Applications 10/071,903, 10/071,917, 10/077,076,
10/077,565, 10/079,107, 09/999,287, 10/107,465
Technology Center 2400

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Oral Hearing Held: November 3, 2009

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Before JOSEPH F. RUGGIERO, KARL D. EASTHOM, and
ELENI MANTIS MERCADER, *Administrative Patent Judges.*

ON BEHALF OF THE APPELLANTS:

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    The above-entitled matter came on for hearing on Tuesday,

November 3, 2009, commencing at 9:05 a.m., at the U.S. Patent and

Trademark Office, 600 Dulany Street, Alexandria, Virginia, before Victor

Lindsay, Notary Public.

1

2   THE USHER: Good morning, Calendar No. 5, Appeal No. 2009-

3 6365, Mr. Mattioli.

4   JUDGE RUGGIERO: Thank you. Good morning.

5   MR. MATTIOLI: Good morning, Thomas Mattioli.

6   JUDGE RUGGIERO: Yes, do you have a card that you can give to

7 the reporter? Are you arguing all the cases?

8   MR. MATTIOLI: Yes. What I was going to discuss with you was an

9 approach --

10   JUDGE RUGGIERO: Well, we're all aware that the cases are

11 overlapping --

12   MR. MATTIOLI: Exactly.

13   JUDGE RUGGIERO: -- so I was going to suggest just pick one and

14 then go through it in detail and then, so we don't duplicate arguments, we'll

15 just fill in with the others.

16   MR. MATTIOLI: Well, that sounds good. I actually grouped them in

17 exactly that type of --

18   JUDGE RUGGIERO: Okay, now --

19   MR. MATTIOLI: The only difference is, you know, there's one

20 that's -- okay, let's -- I would argue 176.1 then. I think that would be -- oh,

21 I'm sorry, excuse me, 09/999,287 --

22   JUDGE RUGGIERO: What's your appeal number? Do you have the

23 appeal number?

24   MR. MATTIOLI: Oh, actually, no, I don't have -- I'm not sure of the

25 appeal number --

26   JUDGE EASTHOM: What is it, 09 what?

1   MR. MATTIOLI: It was 09/999,287 is the application number.

2   JUDGE RUGGIERO: I think that's --

3   JUDGE MANTIS-MERCADER: 6837, that's the number, 6837.

4   JUDGE RUGGIERO: Is this it?

5   JUDGE MANTIS-MERCADER: Yeah, 999,287.

6   MR. MATTIOLI: 999,287.

7   JUDGE MANTIS-MERCADER: Right, so it's 2009-006837, the

8 Appeal number.

9   MR. MATTIOLI: I'm sorry, what was the Appeal number again?

10   JUDGE MANTIS-MERCADER: 2009-006837.

11   MR. MATTIOLI: 6837, okay.   Okay. I wanted to ask, I have a co-

12 counsel with me, Jeffrey Glabicki. I was wondering if he -- if any questions

13 came up, if he was allowed to address the panel? Okay, very good.

14   The Applications -- all of the Applications that are under review here

15 are basically directed toward transmit diversity in wireless communication

16 systems. They are directed toward providing a channelization code to -- into

17 a -- into data, spreading that data with that channelization code. The

18 channelization code is uniquely identified with the transmitting antenna that

19 the data is going to be transmitted from so that when it is decoded on the

20 receiving end, the receiver can decode whether or not -- which antenna,

21 which transmitting antenna, this came from and it can -- by using that

22 transmit diversity, it can tell whether or not correct data has arrived and

23 such.

24   The Appeal that we're arguing here -- the claims that are continuing to

25 pend here are Claims 42 through 45, which are directed toward the receiver

26 end of this operation which is a user equipment. The user equipment

1   comprises a data detection device, and this data detection device is

2   configured such as to receive this signal and to be able to decode this signal

3   and convert it into the -- determine which data was spread -- which data was

4   transmitted from one antenna and which data was transmitted from another

5   antenna. The current state-of-the-art way of doing this is to utilize several

6   joint detection devices which will each receive data and be able to decode

7   data from separate antennas by using the uniquely identified channelization

8   code, and also an add-on to that is an inserted training sequence. But by

9   using the uniquely identified channelization code that is identified

10   specifically with a particular antenna, you can have one data detection

11   device reduce the complexity of the receiver device, and it provides for more

12   efficient operation for the receiving of the signal and the decoding of the

13   signal.

14   Now, it's difficult to talk about only the receiver device without

15   talking about the transmitter and of this operation which is where the

16   channelization code is imparted. The data is -- original data is spread or it

17   can be the exact same data. It could be a data set of symbols, and in our

18   case, in our Application, we discuss data D-1 and D-2. They can be

19   complex conjugates of the data. You can take a complex conjugate of the

20   data, you can spread the same data, D-1, D-2, with one channelization code

21   which is uniquely identified with a particular transmittal antenna and

22   transmit it to the receiver. You take that same exact data, the same exact

23   data symbols, without doing any -- performing any operation, no encoding,

24   no encoding with complex conjugates, and you can code that. You spread

25   that D-1, D-2 data with a second channelization code, the second

26   channelization code which is uniquely identified with -- just to use an

4

1 example, say -- two have channelization code two being uniquely identified

2 with that. The current state-of-the-art does not provide for such a

3 mechanism, such a specific mechanism as uniquely identifying

4 channelization code with a specific antenna or a particular antenna.

5   That's the characterization of the claims, and I think that the other

6 Applications that are at issue here generally are either categorized in a

7 method for transmitting these signals, for spreading these signals, either the

8 same data or a complex conjugate of the data, and taking the data, generating

9 the data, and spreading the data with either -- spreading the same data with

10 the first and second channelization code which is uniquely identified with

11 their respective antennas. Or take a complex conjugate of the data and

12 spreading one set of symbols with one channelization code and another set

13 of symbols with another channelization code which is associated with

14 another antenna, and the rest of the claims are directed towards apparatuses

15 that are either base station or user equipment or a transmitter that would

16 perform this operation.   The Examiner seemed to have applied the Ylitalo --

17 I'm not sure how to pronounce that --

18   JUDGE RUGGIERO: The Ylitalo reference?

19   MR. MATTIOLI: Yeah, that's correct.

20   JUDGE RUGGIERO: And so what's your thoughts on Ylitalo?

21   MR. MATTIOLI: Well, the thoughts on the Ylitalo reference are that

22 the Ylitalo reference is basically directed towards utilizing directional

23 antennas and providing an attenuation to an -- they provide an amplifier to a

24 current state-of-the-art transmission device. And they utilize directional

25 antennas so that at the receiver end what is done is there is a determination

26 based on those attenuation factors and the receiver transmits back to the

1   transmitter to give it an idea of how to properly weight the different signals

2   utilizing these -- I believe they're the SA-1 and SA-2 amplifiers which are

3   designated 102 and 104 in Figure 4.

4   JUDGE EASTHOM: 4 and 5.

5   MR. MATTIOLI: Figure 4, yeah, Figures 4 and 5 in the Ylitalo

6   reference. Everything else in that Ylitalo reference is a prior art

7   transmission system. If you look at Figure 2, Figure 2 is the prior art

8   transmitter system, and it is identical to Figure 4 with the exception of the

9   attenuation in the Ylitalo reference. The Ylitalo reference does not really

10 talk about utilizing -- first of all, the Ylitalo reference does not anticipate the

11 spreading of same-data symbols with two different channelization codes. It

12 takes a prior art transmitter, which is always going through a space-time

13 transmit diversity encoder, and it's making two separate complex -- it does

14 take complex conjugates and it puts one set of complex conjugates on one

15 channel, one set of complex conjugates on another channel. It then does

16 impart the OC, a channelization code, into it, but there's no -- in the prior art,

17 there's no determination of whether or not this is a uniquely identified

18 channelization code with a particular antenna. And, in fact, in Ylitalo itself

19 it provides an example where it may not be. It may be the -- they may use

20 the same channelization codes to spread the data on channel 1 as the data on

21 channel 2. That's at the bottom of column 4, I believe, in Ylitalo.

22   So there's no actual disclosure or teaching or suggestion in Ylitalo,

23 first of all, of spreading the same data symbols which are D1 and D2 of --

24 which is – in many of our claims with unique channelization code that is

25 identified with a particular antenna. Nor is there any discussion of even

26 spreading complex conjugates that are on two different -- that are going to

1 be transmitted from two different antennas. The Ylitalo reference is not
2 directed towards the same type of situation. It's a different solution to the
3 problem which applies the attenuation factor in order to give the transmitter
4 an idea how to, how to weight the amplification of each diversity antenna in
5 order to let one receiver know that this antenna was transmitting to that and
6 this antenna was transmitting to that.
7   JUDGE EASTHOM: Well, it seems like you have some critical
8 language in the Claims throughout the seven cases as to whether or not the
9 art shows codes that are uniquely associated, but I keep trying to decide how
10 to interpret that language. Like, Ylitalo definitely uses two different
11 channelization codes, and those coded signals are applied to -- looking at
12 Figure 4, they're applied to antennas 16 and 18. So we're having difficulty
13 understanding why that -- for example, the code on channel 12 there, why
14 would that not be uniquely associated with antenna 16. And similarly, why
15 wouldn't the code, the channel 14 there, be uniquely associated with antenna
16 18?
17   MR. MATTIOLI: Well, you don't know. There's no requirement
18 whether or not -- there's no discussion of whether or not it's uniquely
19 associated with that. It could be --
20   JUDGE EASTHOM: Well, Counsel, column 4, line 29 of Ylitalo
21 says by using a different spectrum code for each beam in a CDMA system
22 without pilot codes, that's one part where it says they're different. And then
23 in column 4, it says, line 56, and a CDMA system multipliers 12 and 14
24 impart different spread spectrum codes to different beams so a receiver in
25 remote station 2 can discern their beam separately.

7

1   MR. MATTIOLI: Right, well, these are -- right, it allows for the fact
2 that they could be separate, they could be different channelization codes, but
3 again, because there's no discussion of whether or not those channelization
4 codes -- because you're using directional antennas, it doesn't necessarily
5 mean that that channelization code has to be used with that particular
6 antenna. I mean, it could be used with another antenna that is directed in a
7 different direction --
8   JUDGE EASTHOM: Well, we have Figure 4 and we have these
9 multipliers 12 and 14, and, as Judge Ruggiero just said, it looks like OC is
10 associated with 16 and 18, and OC in each one of those multipliers is
11 different. So it's pretty clear that they're applying unique codes to each one
12 of those transmission paths. I don't understand why you're saying it's not
13 clear.
14   MR. MATTIOLI: Well, because if you're looking at line 66 of that
15 same column, it gives an example of where it would be in a CDMA system
16 where the multipliers 12 and 14 are provided with the same spreading codes.
17   JUDGE EASTHOM: That's one option. It then refers to --
18   MR. MATTIOLI: Right, exactly.
19   JUDGE EASTHOM: Well, we have two options, so it's still a 102,
20 right?
21   MR. MATTIOLI: Well, but there's no 102 if there's no identification
22 of the specific code with that specific -- with that antenna.
23   JUDGE EASTHOM: I'm sorry, I thought we had one option where
24 the codes are different and we have one option where they're the same, and
25 they're either -- and there are only two antennas --

1   MR. MATTIOLI: Well, but different doesn't necessarily mean that it
2   is only going to be used with that particular antenna. It may not be used
3   with the other antenna that is shown, but because you're using the directional
4   system and because that's the prior art system, you're not necessarily
5   restricted to the fact that that particular channelization code -- or you're not
6   necessarily talking that that particular channelization code is only identified
7   with that particular antenna because Ylitalo is not concerned with that issue,
8   because Ylitalo is concerned with how you determine -- how you add this
9   weighting factor to this already prior art device in order to provide feedback
10   to the transmitter in order to attenuate the -- in order to adjust the weighting
11   in each antenna to then make a determination as to which antenna
12   transmitted based on that weighting factor. But the user equipment, on the
13   user equipment side anyway in Claim 42, Ylitalo definitely does not disclose
14   the receiver end where you have a data detection device that is competent to
15   make -- a single data detection device that is competent to receive the signal
16   that has either the same spread data -- same spread symbols in two separate
17   communication bursts or at least, you know, two communication bursts, and
18   to decode those based on which -- determine which one -- apply those
19   channelization codes to determine which burst was received from which
20   antenna. Ylitalo doesn't even address the issue from the receiver end in that
21   respect.
22   JUDGE MANTIS-MERCADER: Wouldn't that be inherent? I mean,
23   if you are transmitting, making sure that they're two separate signals,
24   wouldn't it be inherent that you would have a receiver to be able to receive
25   those?

1   MR. MATTIOLI: No, not necessarily because the prior art way of

2 doing it was to have separate detectors in order to determine which antenna

3 was --

4   JUDGE MANTIS-MERCADER: And where do you have "a single"

5 in the Claim? Do you have "a single" in the Claim? A single detector --

6   MR. MATTIOLI: Yeah, well, it's a data detection device.

7   JUDGE MANTIS-MERCADER: Right. So my point is that it does

8 not exclude having multiple.

9   MR. MATTIOLI: Well, in this case, I think it was intended to be an

10 individual device. It has one -- it has an input, not a plurality of devices

11 having a plurality of inputs.

12   JUDGE MANTIS-MERCADER: Right, but that is not spelled out in

13 the Claim.

14   MR. MATTIOLI: Yeah. Well, I guess the language in the Claim, I'm

15 just pointing out, is that the data detection device -- we refer to a data

16 detection device originally in the Claim. And then later on part way down in

17 the Claim, we speak about the data detection device configured to process

18 the received signal with a first channelization code uniquely associated with

19 the first transmission antenna to produce burst data, and the data detection

20 device, same data detection device, configured to process the received signal

21 with a second channelization code that is uniquely associated.

22   JUDGE MANTIS-MERCADER: But that doesn't preclude having

23 this data detection device having two single receivers, two separate

24 receivers? Just like a data detection device doesn't preclude having two

25 detection devices.

26   MR. MATTIOLI: I am not very --

1   JUDGE EASTHOM: Following up, in column 4, line 57, it says the
2   reason that you report these different codes is so that a receiver can discern a
3   beam separately. I would think that that's your detection device, that's a
4   single receiver even if it doesn't preclude -- it does preclude two separate
5   devices.
6   MR. MATTIOLI: Well, I don't -- I mean, I don't think there's enough
7   in there to make an argument that it's the same detection device or that it's a
8   joint detection device that can receive and decode this signal. Just from --
9   JUDGE RUGGIERO: Let's go back to the unique association
10   language again. Again, looking at Figure 4 of Ylitalo, this is a disclosed
11   example. So you have channel 1 with a particular spread code applied to a
12   particular antenna. Why is that not uniquely associated with that antenna
13   that it's applied to?
14   MR. MATTIOLI: Well, I guess because of the language that's later
15   on in Ylitalo that says it could be the same spreading code depending on
16   which prior art device you're using. Ylitalo is -- the invention in Ylitalo is
17   not this, so I don't think you can -- I don't think that there is a teaching that
18   that particular channelization code is uniquely identified with that particular
19   antenna. I don't think Ylitalo is even concerned with whether or not that
20   channelization code --
21   JUDGE RUGGIERO: So your argument is that that code could be
22   applied to any antenna? It doesn't have to be what's shown in Figure --
23   MR. MATTIOLI: It doesn't have to be that the code that is -- that the
24   code -- the OC code that is necessarily spread going into the spreader (12) or
25   multiplier (12), I believe they call it, is not necessarily unique to antenna 16.
26   And it could also be the same code that is going into spreader 14 that is

1   being transmitted from transmitting antenna 18, and Ylitalo expressly states

2   that in the bottom of column 4.

3   JUDGE EASTHOM: But, Counsel, that's only when you have that

4   other method of keeping track of the pilot signals, right? I mean, if you're

5   going to -- if you want to have -- you can have orthogonal pilot codes or you

6   can have orthogonal data; that's just one other way of keeping track, right?

7   MR. MATTIOLI: I understand, but still even if they're different, it

8   still does not necessarily -- it does not necessarily teach that the code is

9   specifically unique or identified with that particular antenna. We always see

10 two antennas that are being used. In other art that was cited, you see that

11 when there are more antennas, sometimes the code is reused on a different

12 antenna. It may be different for two antennas, but the same code may be

13 used on antenna 3. The code that goes into antenna 16 may be different

14 from the code that is being used to spread the data in 18, but when you add

15 another antenna they may use the code for antenna 1 on antenna 3.

16   JUDGE MANTIS-MERCADER: But just looking at Figure 4,

17 though, I mean, this is a disclosed embodiment that the Examiner relies on.

18 It's a specific embodiment that the Examiner relies on. There might be other

19 embodiments, but that's not what the Examiner relies on. I mean, the

20 Examiner relies on Figure 4, and, as you can see from Figure 4, OC is

21 associated with the multiplier 12 and OC is associated with the multiplier

22 number 14. I mean, there must be a reason why 12 and 14 are different

23 numbers. So those are uniquely associated in that particular figure with

24 respective antennas 16 and 18, so --

25   MR. MATTIOLI: Well, the other thing that this also teaches if you're

26 looking for the Examiner's specifically 102 rejection is that the complex

1   conjugates -- you're spreading the complex conjugates with different codes

2   that are uniquely identified with -- I mean, you're spreading the complex

3   conjugate codes with a different channelization code on one channel and

4   maybe a different channelization code on channel two. But you're not

5   spreading the same data with -- which is a less complex operation, you're not

6   spreading the same data with a separate channelization code that is uniquely

7   identified with a particular antenna which would be -- if you take a look at

8   Figure 5 of the Application at issue, you're looking at, you know, D-1 and

9   D-2 which goes into -- if in Figure 5 of the Application that we're discussing

10   you see that the data symbols D-1 and D-2, first set of data D-1 and D-2, is

11   being spread by channelization code 1, the same D-1 and D-2 is being

12   spread by channelization code C-2, and each one is being transmitted -- it's

13   the same data being spread with -- it's not a complex conjugate of the

14   database, the same data which precludes a 102 rejection based on Figure 4

15   because Figure 4, and no figure in Ylitalo, discloses that a less complex

16   operation where noncomplex conjugates are spread using --

17   JUDGE EASTHOM: Counsel, I was looking in your Brief. I didn't

18   see that made in the original Brief.

19   MR. MATTIOLI: Yeah, I think I made a minor error in comparing

20   the -- in categorizing the claims. I used Figure 2 on both the ones that have

21   complex conjugates and on the one that does not have the complex

22   conjugate, but Figure 4 -- Figure 5, excuse me, is actually more applicable

23   to the claims that are related -- that are directed toward the spreading of

24   same data fields.

25   JUDGE MANTIS-MERCADER: I think also your Claim is broader

26   than what is being argued, even assuming that the argument was made in the

1   Brief. It says a received signal, and then the received signal having a first

2   communication burst and a second communication burst, and the Examiner

3   refers to the first communication burst as the top signal, S-1, S-2 star and the

4   second communication burst would be S-2, S-1 star, and that reads on the

5   Claim.

6   MR. MATTIOLI: Yeah, I'm not sure that there was -- actually, I don't

7   think that was the 102 rejection on that particular one anyway.

8   JUDGE EASTHOM: I think that --

9   MR. MATTIOLI: -- 42 --

10   JUDGE MANTIS-MERCADER: Right --

11   JUDGE EASTHOM: It's on page 5 of your -- at least you argued it

12   that way --

13   MR. MATTIOLI: Yeah, I have to look and see. It may have been.

14   There was one that was just a 103 -- yeah, okay, it was a 102 in Ylitalo.

15   JUDGE EASTHOM: I think -- Counselor, what I'm discussing is that

16   it's not the same data in the same time slot.

17   MR. MATTIOLI: We have S-1 and S-2 in Figure 4.

18   JUDGE MANTIS-MERCADER: And where is that in the Claim?

19   MR. MATTIOLI: Oh, it's transmitting -- it's in the third line of the

20   Claim or the fourth line of the Claim.

21   MR. GLABICKI: Yeah, as the Claim refers to that same time slot,

22   and I believe the Examiner was referring to the subordinate time slot and

23   Ylitalo as being columned, for example, column 2, line 50, where it says the

24   first symbol is encoded to be transmitted, and the first and second symbol

25   time slots, and it shows here that in the Ylitalo, they're referring here to the

26   symbol time slots. And it showed in the figure that the first symbol is

1   actually sent in time slot 1 on the first antenna, then sent in time slot 2 on the

2   second antenna. Whereas, in the Claim refers to the -- and it -- that the first

3   communication burst and the second communication burst are set in the

4   same time slot. So this element here does not read on the same time slot .

5   JUDGE MANTIS-MERCADER: But was that argued in the original

6   Brief?

7   MR. MATTIOLI: I'm not sure.

8   JUDGE MANTIS-MERCADER: No, it wasn't.

9   MR. GLABICKI: But this is clarifying the same data.

10   JUDGE MANTIS-MERCADER: That wasn't argued either, you

11   know.

12   JUDGE EASTHOM: I was just looking at -- in other words, I thought

13   the Examiner was saying the two -- the one burst was on channel 1 and the

14   second burst was on channel 2. I thought that was the gist of the rejection,

15   and that the burst, the first burst, would be, you know, within the slot 0 to

16   2T, and the second burst would be during the same time, 0 to 2T. Was

17   that -- wasn't that the gist of the rejection?

18   MR. GLABICKI: But I think that's just the way time slots are

19   defined in Ylitalo. So he's kind of taking what's defined as a time slot in

20   Ylitalo and saying well, now I'm going to just say now it's two time slots and

21   Ylitalo is a time slot and then compare them.

22   JUDGE EASTHOM: Well, I mean, even if you just go from 0 to T it

23   would still read -- if you call it one time slot or you can say two bursts or

24   one slot, but from 0 to T --

25   MR. GLABICKI: That's one time slot, then it's different symbols, the

26   data is different in the time slot.

1   JUDGE EASTHOM: But I thought that -- I think the Claim just says

2   you're receiving a signal and it has burst -- a first burst and a second burst,

3   and within each burst the symbols are different, even though the signal that

4   makes up the two symbols is one signal.

5   MR. GLABICKI: It says the first and second burst being transmitted

6   from a base station in the same time slot over different antennas and then the

7   first and second communicating bursts having the same data.

8   JUDGE EASTHOM: Oh, the same data.

9   MR. GLABICKI: So that they're all tied together.

10   JUDGE EASTHOM: I think that might be the key that's missing from

11   your argument in the Brief, if that's your argument today.

12   MR. GLABICKI: Yeah, I do apologize for that. And also -- there's

13   also the language of the inserted training sequence which is also mentioned

14   in Ylitalo, but it's actually for a non-CDMA system that refers to a training

15   sequence, I believe. That is on -- it's referred to at column 9, lines 33 to the

16   end of the paragraph and about 41 where a data slot in a time division

17   system, which is different than a CDMA system, may include, for example,

18   58 data bits followed by 26 bits of a training sequence or by 58 data bits as

19   in a GSM system which is a time division multiple access system. The

20   training sequence identifies a source of the signal that's sent. So in this case

21   instead of using a channelization code on each antenna, a different training

22   sequence is used here and the individual beam to remote unit so that the

23   remote station can separately discern beams. In this way, remote station 2

24   can separately receive two beams using the training sequence, and then it

25   says instead of using orthogonal spreading codes as in the CDMA system.

26   So it's saying to use one CDMA system, use another CDMA system and our

1 Claim uses both. This is teaching -- actually teaching away from using
2 CEDMA and a training sequence together. It says use one in this type
3 system, this in another type system, but it doesn't have any disclosure that it
4 teaches away from combining the two together as in this Claim.
5   JUDGE MANTIS-MERCADER: Again, Counselor, was that
6 argument in the brief previously?
7   MR. MATTIOLI: I don't think it was.
8   JUDGE EASTHOM: Do you have anything more on this particular
9 case?
10   MR. MATTIOLI: I really don't, no.
11   JUDGE EASTHOM: Do you guys have any questions? All right --
12   MR. MATTIOLI: -- Claim 45 that's the channelization device
13 which -- before the first and second communication burst to the data
14 detection device using certain training sequences, I think that's where
15 probably the argument occurred concerning training sequences.
16   JUDGE RUGGIERO: Do you want to pick another case now or not?
17   MR. MATTIOLI: Well, I -- okay, we -- again, I don't know the
18 numbers of the --
19   JUDGE EASTHOM: If you give us the serial number, we can --
20   MR. MATTIOLI: It's 10/071,903.
21   JUDGE RUGGIERO: It's -- the Appeal number is 006365.
22   MR. MATTIOLI: I think that that one -- there are several of these
23 that the claims are very similar. I mean, probably not -- one is sort of the
24 method of performing this and the other is an apparatus for performing this,
25 so I guess this is probably the best one to start with.

1   Claim 13 is basically the transmitter side of this operation that we've
2   been talking about. And, again, I apologize for the lack of clarity there, but
3   Claim 13, again, is directed toward generating a first data field of symbols
4   and spreading both the first data field with the first channelization code
5   which is uniquely associated with the first antenna and spreading that same
6   first data field using the second channelization code to produce a second
7   spread of data where the first and second channelization codes are uniquely
8   identified with their respective antennas, and then transmitting the signal
9   over the first and second antennas. The argument is essentially the same as
10   the one we've been discussing based on that Claim. There are similar claims
11   in the 10/071,917. Claim 13 is very similar to that. We're talking about the
12   transmitter being in the user equipment in this case as opposed to --
13   JUDGE RUGGIERO: I take it that these two cases, basically, the
14   preamble is different --
15   MR. MATTIOLI: Exactly. That's right. Yeah, that's what I was
16   saying. We're arguing one -- really, we're arguing the core of this -- one
17   essentially -- so, yeah, what you're dealing with with the -- again, our -- my
18   Applications 10 -- the 917, the 10/071,903, 10/077,076, and 10/079,107 are
19   basically directed toward either method or apparatus -- transmitter apparatus
20   that perform this operation. One set of claims is the set of claims that is
21   directed toward spreading the same first data with first channelization code
22   and a second channelization code which is with both the channelization
23   codes being uniquely identified with a particular transmitting antenna. The
24   only difference -- the one that is more different would be our 10/107,465.
25   JUDGE MANTIS-MERCADER: That's 2009-7629.

18

1   MR. MATTIOLI: And this application is directed toward a space
2   code transmit diversity data transmitter which has two channelization
3   devices -- a first and second channelization devices and a first and second
4   training sequence device. So that differs from the other apparatuses in the
5   other applications in that now we are applying both training sequence and
6   the channelization of the -- to the signal that's going on -- that's being
7   transmitted on each channel. So that would be the other one; it would be the
8   first channelization device spreads the data with a unique first channelization
9   code produced by the first spread data. The second channelization device
10   spreads the data with a unique channelization code different from the first
11   channelization code.   The first training sequence device and second training
12   sequence device, this is, again, utilization of both of the technologies in one
13   transmitter to transmit the data as we discussed. The diversity antennas are -
14   - the first diversity antenna transmits the received first communication burst,
15   and the second diversity antenna transmits the second communication burst.
16   And the final clause is that the channelization codes are uniquely identified.
17   The first channelization code is uniquely identified with the first diversity
18   antenna and the second channelization code is uniquely identified with the
19   second diversity antenna.
20   The Dependent Claim 19 adds scrambling devices to scramble them
21   with a scrambling code that is associated with the transmitter, and that was a
22   103 rejection by the Examiner based on the Akiba reference. I think it
23   stands on the Independent Claim more so.
24   JUDGE RUGGIERO: Any questions?
25   JUDGE EASTHOM: No, I don't.

1   JUDGE RUGGIERO: Okay. Do you want to talk about 071,903 or

2   071,907?

3   MR. MATTIOLI: 07, 03 -- you said 071,907?

4   JUDGE RUGGIERO: Yes.

5   MR. MATTIOLI: Again, 071,903 is directed toward a method in a

6   base station for transmitting the field of symbols. And if you go to Claim 13

7   again, we generate the first data field of symbols, you spread the first data

8   field of symbols using the first channelization code uniquely identified with

9   the first antenna. You spread the same first data field using the second

10   channelization code to produce the second data field which is where the

11   second channelization code is uniquely associated with the second antenna.

12   And the -- both fields are then transmitted over the first and second

13   antennas, respectively. The first Claim, and that's Claim 13, again, going

14   back to the first claim, is doing the same thing except you are generating

15   complex conjugates of the symbols that are being transmitted over each

16   different antenna. The first set of complex conjugates are being transmitted

17   over the first antenna being spread with a channelization code uniquely

18   identified with that antenna. The second set of complex conjugates are

19   being transmitted over a second antenna with a second channelization code

20   uniquely associated with that antenna.

21   10/079,107 is directed toward similar subject matter.   You reach

22   Claim 13, it's a method -- it differs in the preamble, but essentially you

23   spread the first data field with first channelization code uniquely identified

24   with the first antenna. You spread the first data field, the same first data

25   field, with a second channelization code producing a second spread data

26   field, and the second with a second channelization code uniquely identified

1   with the second antenna, and then transmit those signals over the first and

2   second antennas with the codes.

3   Claim 15 is the transmitter directed toward that method. We have a

4   first and second antenna transmitting the data field of symbols, a first

5   channelization device which spreads the data field with the first

6   channelization code uniquely identified with the first antenna, and a second

7   channelization device which spreads the data field using the second

8   channelization code uniquely identified with that second antenna to produce

9   the second data field. I go to that one because it's a little -- it's the same --

10 more -- it's more or less the same except you're using the same data fields in

11 that one. If you back up to Claim 1 again, now you're using the complex --

12 it's the same Claim, but you're using the complex conjugates. You're

13 generating the complex conjugates that are being -- one side is being

14 transmitted to the first antenna and the second set is being spread with the

15 second channelization code and being transmitted through the second

16 antenna.

17   And Claim 5 is then the transmitter that is associated -- that has the

18 first and second antennas to transmit the signals, an encoder for coding the

19 data field to generate the complex -- to produce a second data field having

20 complex conjugates of the symbols, and then a first and second

21 channelization devices which respectively spread the set of complex

22 conjugates with a channelization code associated with a particular antenna

23 that the channelization device is connected to. Those are all the claims of

24 071,903 and 079,107. I think that's may be all the claims, at least

25 independent claims --

1   JUDGE RUGGIERO: Can we look at Claim 13 of 903? There's
2 another reference involved here, it's a Dabak-473.

3   MR. MATTIOLI: Right.

4   JUDGE RUGGIERO: What's your thoughts on Dabak-473?

5   MR. MATTIOLI: Well, Dabak-473, the only -- they talk about
6 spreading the data with Walsh codes, and they definitely use the same Walsh
7 code to spread data over different antennas. They use Walsh Code 1, Figure
8 4 of that reference.

9   JUDGE RUGGIERO: The Examiner referred to Figure 4. There are
10 four antennas --

11   MR. MATTIOLI: Right. Yeah, there are four antennas and none of
12 them have a uniquely identified channelization code.

13   JUDGE RUGGIERO: Well, I think the Examiner was saying, you
14 know, there's one code applied to the first two antennas, and there's another
15 code applied to antennas three and four. The Examiner was saying well, you
16 could reduce the number of antennas from four to two.

17   MR. MATTIOLI: Well, but that would teach away from utilizing one
18 code --

19   JUDGE RUGGIERO: No, then you would have --

20   MR. MATTIOLI: You would have one code with one antenna and
21 you would have another code with another antenna.

22   JUDGE RUGGIERO: A different code --

23   MR. MATTIOLI: Maybe you could remove antennas three and four
24 and then only have antennas one and two, and then you would be left with --

25   JUDGE EASTHOM: Well, what about prior art Figure 1, doesn't

1   that show two antennas? It's -- I thought this was -- Figure 4 was Dabak's

2   improvement over these two as a combination of Figure 1 and Figure 2?

3   And if you look at Figure 1, you have W-1, S-1, and W-2, S-1, you have

4   just two antennas with different what you referred to as Walsh codes.

5   MR. MATTIOLI: Yeah, I think that's what the reference refers to

6   them as. I guess they're calling them weights actually. They're -- a weight

7   value in the Figure 15, from the first weight value and a second weight

8   value, I'm not sure that that rises to a uniquely identified channelization -- a

9   unique channelization code used to spread the data. It says it applies a

10   weight value, it doesn't say the data is spread by a channelization code.

11   JUDGE RUGGIERO: But I noticed that and I also noticed that I

12   thought they were using that same weight value in Figure 4, but you guys,

13   your Counsel and the Examiner, referred to it as a channelization code, so I

14   didn't see any -- I was just assuming that you assumed that the weight meant

15   it was a different code. Are you arguing that they're not different codes?

16   MR. MATTIOLI: Yes, I'm arguing that they're not different codes --

17   in Figure 1 --

18   JUDGE EASTHOM: Did you make the argument in the Brief?

19   MR. MATTIOLI: I think I made the argument that W-1 and W-2

20   were -- well, W-1 was applied to more than one antenna and W-2 was

21   applied to more than one antenna.

22   JUDGE MANTIS-MERCADER: Could I ask you about that

23   particular -- did you finish responding to the question? If you look at -- I

24   mean, the claims are all connected. You use the term compatibly. So, if you

25   look at W-1, the first one, W-1, S-1 and W-1, S-2 in Figure 4, and you look

26   at W-2 on the third line down connecting with antenna, the third antenna, it's

1   W-2, S-1 W-2, S-2, right? So you have two different factors, W-1 and W-2,

2   associated with the same signal and two different antennas. So why doesn't

3   that read on your Claim bearing in mind that -- is open ended and it could

4   include other antennas?

5   MR. MATTIOLI: I'm not sure I'm following you. You're saying that

6   W-2 is considered --

7   JUDGE MANTIS-MERCADER: I'm saying that W-1 is uniquely

8   associated with the signal as it relates to antenna 1, and W-2 is uniquely

9   associated with the signal as it relates to antenna 3. The fact that you have

10 additional antennas added , antenna 2 and antenna 4, are not precluded from

11 the term comprising.

12   MR. MATTIOLI: But W-1 is not uniquely associated with antenna 1.

13   JUDGE MANTIS-MERCADER: When you look at antenna 1 and

14 antenna 3, they're unique.

15   MR. MATTIOLI: But it's also associated with antenna 2.

16   JUDGE MANTIS-MERCADER: Yeah, but you also have a

17 comprising, so it doesn't preclude having additional --

18   MR. MATTIOLI: Well, we have it that the code is uniquely

19 associated with -- a particular code is uniquely associated with a particular

20 antenna --

21   JUDGE MANTIS-MERCADER: Right, so that --

22   MR. MATTIOLI: -- a particular group of antennas.

23   JUDGE EASTHOM: Let me ask you this: In the -- the Claim

24 language, I guess, is kind of troubling in that if you say that the code is

25 uniquely associated with an antenna and your argument is it's not uniquely

26 associated with an antenna because it's uniquely associated with two

1   antennas, or associated with two antennas, but the association itself is unique

2   in that W-1 is only applied to the first channel -- it's only applied to that

3   transmission line connecting AT-1, and the association with the whole

4   connection I think --

5   MR. MATTIOLI: But it's also applied to the transmission on AT-2.

6   That's where --

7   JUDGE EASTHOM: But the association isn't the same association

8   because it's on a different transmission line. In other words, if I have an

9   association with you and an association with your counsel, my association

10 with you is unique even though I'm the same, I'm the code, and my

11 association with him is unique because of our different transmission channel,

12 if you will.

13   MR. MATTIOLI: I guess looking at those Figures, 2 and Figure 5,

14 and looking at the Claim in light of the specification, I was looking for the

15 actual language on it. The unique association is that channelization code 1,

16 Figure 5 and 2, is uniquely associated with transmission over either antenna

17 15 if you're looking at Figure 2 or antenna 46 if you're looking at Figure 5,

18 and channelization code 2, it's unique association is with the antenna 16 in

19 Figure 2 and with antenna 47 in Figure 5 -- specification -- it's not that it's

20 uniquely associated with the data, because even in Figure 5 the same data is

21 being spread with two different channelization codes. So it's not a

22 channelization code in the spec that it is uniquely associated with data being

23 transmitted, it's a channelization code that's uniquely associated with the

24 antenna that is being used to transmit the particular data.

25   In the specification, and I'm looking at the 09/999,287 specification

26 which was the first -- that was Appeal 2009-006837 specification, paragraph

1   23, talking about the flow diagram, and what's going on in this one is

2   speaking about -- it is referring to the method as being performed by the

3   device at Figure 2. In paragraph 23 -- maybe -- actually, it's in the upper

4   column of paragraph 23, the third sentence down, as each channelization

5   device, 8 and 9, spreads the respective data input using a separate

6   channelization code associated with a respective antenna, 15, 16. So that's

7   different from if you're looking at the Dabak reference that, you know, one

8   antenna is assigned to 15 to antenna 1 and 16 to antenna 2 as, as a respective

9   antenna, then different channelization codes is not shown --

10   JUDGE RUGGIERO: I guess that's kind of -- maybe you can almost

11   highlight the distinction because, I mean, it seems in your spec there you're

12   talking about a distinct code and it just says a unique association. The Claim

13   is referring to an association of both of the code --

14   MR. MATTIOLI: In light of -- the association was intended to be

15   with the antenna, with a particular antenna.

16   JUDGE RUGGIERO: You guys have anything?

17   JUDGE EASTHOM: I don't have anything, do you?

18   JUDGE MANTIS-MERCADER: No, I'm okay.

19   JUDGE RUGGIERO: Do you want to talk about another case or --

20   I'm not encouraging you --

21   MR. MATTIOLI: No, no, it's okay. I think we addressed all the

22   Claims in all the cases, I mean all of the Independent Claims, at the very

23   least, in all of the cases.

24   JUDGE RUGGIERO: -- 107,465, Claim 18, that was the transmitter

25   that -- sequence -- channelization -- do you guys have anything else?

26   JUDGE EASTHOM: No.

1   (Whereupon, the proceedings, at 10:09 a.m., were concluded.)
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